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ABSTRACT

The 1969 Virginia Needs Assessment project was conducted in two stages: (1) identification of statewide school program goals, and evidences of programmatic effort and outcomes; and (2) the development of a model that focused on the learner in the school environment, and incorporated cognitive, affective, and facilitative data in the context of the student's self system interacting with the social system. For the 1974 project, it was not necessary to redefine objectives or to redesign the strategies and instrumentation used to measure them. Instead, the goals for the 1974 project were to update the status of learner outcomes by reassessing performance in a longitudinal sample, and to investigate the measurable relationships between student characteristics in the cognitive and affective domains. Results and discussion of the findings are presented. (Author/BW)

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"VIRGINIA EDUCATIONAL NEEDS ASSESSMENT IN THE COGNITIVE-AFFECTIVE DOMAINS 1969 and 1975."

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Introduction

In 1969 Virginia assumed full responsibility for administration of Title III, ESEA. At that time the Virginia State Department of Education, as part of the Title III, ESEA State Plan, initiated a program to assess the educational needs of public school children in the cognitive and affective domains and contracted with the University of Virginia to conduct this project. The model for this assessment in the cognitive and affective domains was presented at the 1970 AERA meeting and the results were published in December, 1970.

To complete its State Plan, the Virginia State Department of Education contracted with the Glen Haven Achievement Center in 1971 to conduct a needs assessment in the psychomotor domain. This study was published in November, 1973.

In April, 1974, the Virginia State Department of Education contracted for a second phase of educational needs assessment with the University of Virginia in the cognitive-affective domains and with the Glen Haven Achievement Center in the psychomotor domain. The objective of this paper is to present the progress and evaluation of the cognitive-affective model from 1969 to 1975 and to report longitudinal growth in school children. The assessment of the psychomotor domain by the Glen Haven Achievement Center will not be dealt with in this paper.

Procedures

General

The 1969 Needs Assessment project was conducted in two stages. The first stage was to identify statewide school program goals, evidences of programmatic effort, and evidences of programmatic outcomes. This stage proceeded from project objectives through the documentary analysis of policy guidelines, program recommendations, and programmatic directives. The second stage of the project concentrated on the development of a model that focused on the learner in the school environment, and incorporated cognitive, affective, and facilitative data in the context of the student's self system interacting with the social system. The purpose of this research strategy was to identify and describe the

TM005 626

status of learner needs in terms of their incidence, criticality, and dispersion, and their relationship to self and social variables.

Specific behavioral objectives in the learner-oriented (cognitive and affective) domain were based on, and developed from, three sources of goals: internal authoritative policies, internal non-authoritative recommendations, and external non-authoritative recommendations. In addition, evidence of programmatic effort such as officially-accepted curriculum guides and accreditation standards were used to specify behavioral objectives. Objectives were developed in English (literature, language, and composition), mathematics, reading, science, social studies, as well as personal and social categories of affective behavior. Additional behavioral objectives were developed for seven other curricular areas, and objectives in the supportive-facilitative domain were developed for school system personnel and instructional resources (particularly library and audio-visual facilities).

Needs were generally and operationally defined as absolute or relative gaps between goals and evidences of programmatic outcomes. An absolute gap occurred when goals sought outside of Virginia were not programmatically implemented in the state. A relative gap occurred when goals were in varying degrees programmatically implemented in Virginia, but evidence of programmatic outcomes fell short of established standards.

This first (1969) project had to identify, define, and document school program objectives which could be assessed in relation to the level and nature of program effort, and in relation to student behaviors measurable in the cognitive and affective domains within the context of the self-social instructional system. The major products of the 1969 project were the specification of objectives, the development of appropriate instrumentation to measure status with respect to these objectives, and the establishment of baseline levels of program outcomes in terms of student performance.

For the 1974 project, it was not necessary to redefine objectives or to redesign the strategies and instrumentation used to measure them. Instead, the goals for the 1974 project were to update the status of learner outcomes by reassessing performance in a longitudinal sample, and to investigate the measurable relationships between student characteristics in the cognitive and affective domains.

In the 1969 project, behavioral objectives in the affective domain had been used to develop an affective assessment instrument which documented student self-concept, attitudes toward the school and its tasks, attitudes toward citizenship, and attitudes with respect to the student's relations with others in the social context. The strategy of the 1974 project was to readminister to a sample composed of longitudinal or follow-up students relocated from the 1969 project and to a new sample of students in the lower grades both the affective instrumentation and cognitive performance tests in reading comprehension and writing. Through Fall and Spring administration of these instruments to these students, coupled with the assembly of appropriate standardized test scores available on the students in other subject-matter areas, two goals could be met: the assessment and analysis of student outcomes in the subject-matter areas from 1969 to 1974, and the analysis of the interrelation of student cognitive and affective characteristics. In meeting this latter goal, the validity of affective assessment to provide information which could be used as a basis for

considering and designing more effective school instructional programs could be established. In addition, the validity of specific instrumentation procedures used to measure these affective characteristics could be established.

Sampling

In the 1969 study, a stratified random sample of approximately 8000 pupils was selected in each of the grades 4, 7 and 11. In 1975, two samples were used. The first consisted of those students who were in grades 4 and 7 in the 1969 sample and who now are in grades 9 and 12. (Approximately 4100 9th graders and 3300 12th graders were successfully followed.) The second sample consisted of a stratified random sample of approximately 8000 4th graders and 8000 6th graders. A breakdown of both samples is shown on Table I.

Fifty-seven school divisions had participated in the 1969-70 Needs Assessment, selected to represent the state's school divisions in size, population density, geographical location, and program features. The resulting sample was found to be representative of the state and of the six regions into which it was divided: Southwest Virginia, Valley of Virginia, Northern Virginia, Central Virginia, Southside Virginia, and Tidewater Virginia. For the 1974-75 testing, fifty-six of these original districts participated. Three new districts were added to fill out representation in all twenty-two Virginia planning districts.

Instrumentation and Analysis

Data collected in the 1974-75 Needs Assessment Project will provide information useful in assessing educational needs in Virginia along the following dimensions:

a) Reading comprehension in subject content areas of social studies, language arts, science, and math, and the relationship of interest in the material to comprehension.

b) Pupil self-concept related to the school environment, and the relation of affect to educational performance on standardized tests and on reading comprehension and composition skills.

c) Development of composition skills including sentence structure, punctuation, syntactical construction and spelling.

Instruments were administered at all four grade levels in these three areas in both the fall and spring testing programs. Answer sheets for all tests except the composition exercise were designed to be machine-readable.

The difference between the instrumentation for Phase I and Phase II consisted of the addition of a writing sample and the reading comprehension in the content area. Further, the affective instrument developed in Phase I was refined and normed on the Phase II sample. (See Table II for Data Collection Instruments for Phase I and Phase II). Instrumentation and analysis in the three areas under study is described below.

1. Reading comprehension - Tests were prepared by selecting stories from a well-known series of reading exercises covering the content areas of social studies, language arts, and science. Several tests in the math content area were also added at the sixth grade level. Four forms of the test were prepared

TABLE I
SAMPLE SIZE BY GRADE

Cognitive and Affective Domains

Phase I (1969)

Sample	Grade 4	Grade 7	Grade 11	Total
Schools	207	151	138	296
Class Sections	208	283	239	730
Students	7,000	7,075	5,975	20,050

Phase II (1974)

Sample	Grade 4	Grade 8	Grade 9*	Grade 12*	Total
Schools	169	143	125	100	537
Class Sections	279	281	---	---	560
Students	7,043	7,464	4,142	3,323	21,972

* All students at this grade level participated in Phase I.

TABLE II DATA COLLECTION INSTRUMENTS

Phase I (1969)				Phase II (1974)			
Cognitive Domain		Affective Domain		Cognitive Domain		Affective Domain	
Instrument	Target Population	Instrument	Target Population	Instrument	Target Population	Instrument	Target Population
SRA Achievement Series, Blue Level	Grade 4 pupils	VAAQ - Elementary form	Grade 4 pupils	McCall-Crabbs Reading in the Content Area	Pupils in grades 4, 6, 9 and 12	VAAQ - Elementary form	Grade 4 and 6 pupils
Lorge-Thorndike Intelligence Test	Grade 4 pupils	VAAQ - Intermediate form	Grade 7 pupils	Tests from State testing program	Pupils in grades 4, 6, 9 and 12	VAAQ - Intermediate form	Grade 9 pupils
SRA Achievement Series, Green Level	Grade 7 pupils	VAAQ - Secondary form	Grade 11 pupils	Writing Composition Exercise	Pupils in grades 4, 6, 9 and 12	VAAQ - Secondary form	Grade 12 pupils
California Shortform of Mental Maturity	Grade 7 pupils	VAAQ - Teacher form	Teacher assessing pupil affect for ¼ of pupil population	SRA Achievement Series	Pupils in grades 4, 6, 9 and 12	McCall-Crabbs Reading in the Content Area (affective items added)	Pupils in grades 4, 6, 9 and 12
Sequential Tests of Educational Progress	Grade 11 pupils					Writing Composition Exercise (Word choice, word relationships, etc.)	Pupils in grades 4, 6, 9 and 12
School and College Ability Tests	Grade 11 pupils						

for fall testing, one for each grade level, with pupils in each grade asked to read three or four "core" stories (identical for all pupils taking that test form) and one or two "additional" stories. There were from 30 to 50 additional stories at each level. Administration of the tests was untimed; pupils were asked to read each story and answer multiple choice questions about its content. They were also asked to indicate their interest and rate the difficulty of each story and its questions.

An analysis of reading comprehension results was mailed to Division Superintendents in late April. Graphs were drawn by computer depicting, for each grade tested, division performance related to regional and state mean scores in each of the content areas studied.

These reading comprehension tests were readministered in the spring testing. However, half of the twelfth grade pupils were randomly assigned the ninth grade test forms, and half of the ninth grade pupils were given the twelfth grade tests. Similarly, half of the sample class sections at grade four in each division completed sixth grade reading comprehension tests, with half the sixth grade sections taking the fourth grade form. This distribution of test forms enables comparisons across grade levels of the spring test results, while providing for comparisons with fall results at each grade level.

2. Affective Assessment - These questionnaires represented revisions of affective instruments used in the 1969-70 Needs Assessment. Three forms of the questionnaire have been developed, with fourth and sixth grade pupils completing the elementary form, and ninth and twelfth grade pupils taking the intermediate and secondary forms, respectively, in both fall and spring testing.

Analysis of the questionnaire includes computation of scores for four subscales and the total questionnaire. These scales parallel the categories of affective objectives on which design of the questionnaire was based. They are identified as follows:

1. Citizenship -- Items in this scale measure citizenship in terms of both understanding of and support for societal structures and acceptance of and concern for other people.

2. School, Education and Learning - - Compatability with the school environment is assessed in terms of behavior in the classroom and attitudes toward school work. Questionnaire items contributing to this scale measure a student's interest and inquisitiveness in learning and care in completing school work.

3. Interpersonal relations -- Items grouped in this scale deal with how an individual relates to his teachers and peers in the classroom. In particular, group orientation and conformity to group norms are assessed.

4. Self-Esteem -- The statements in this scale require an individual to assess his own feelings and performance. While items are phrased in terms of the school environment, they seem to represent more generally his feelings about himself and his capacity to cope.

Subscale and total scores are provided. These scores are converted into percentiles using the appropriate state norms. See figure 1 for Assessment Model.

3. Composition - In the fall testing, fourth and sixth grade pupils were asked to write creatively for twenty minutes, using a picture of a forest fire to suggest themes and stimulate thought. Ninth and twelfth grade pupils were allowed thirty minutes to write about a person they admired. For the spring composition exercise, all students were allowed thirty minutes to write creatively using a picture of a family and baby (and with foreground and background clearly defined) as stimulus. The data in the pupil compositions is approximately 20 times as extensive as that analyzed in the National Assessment of Education Progress writing study.

Data Collection

Data collection for Phase I was initiated in the fall of 1969. Contact was made through the State Department of Education and workshops were conducted to familiarize school division representatives with the program and its requirements. All testing was handled by the contractor who also scored and analyzed all test results.

For Phase II of the Needs Assessment tests were administered in the fifty-nine participating divisions in Fall 1974. Follow-up testing of all sample pupils was completed in the Spring, 1975 term. Prior to testing, workshops were conducted by Needs Assessment personnel in six locations throughout the state to explain test administration procedures and allow school division representatives the opportunity to pose questions and discuss the testing. Most divisions attended both the Fall and Spring workshops; testing materials for divisions which failed to attend were mailed and telephone contact was made to assure proper administration. Completed tests were returned to the Department of Research Methodology of the University of Virginia by mail (See appendix A for schedule of Phase II testing program).

Results and Interpretations

Cognitive Domain

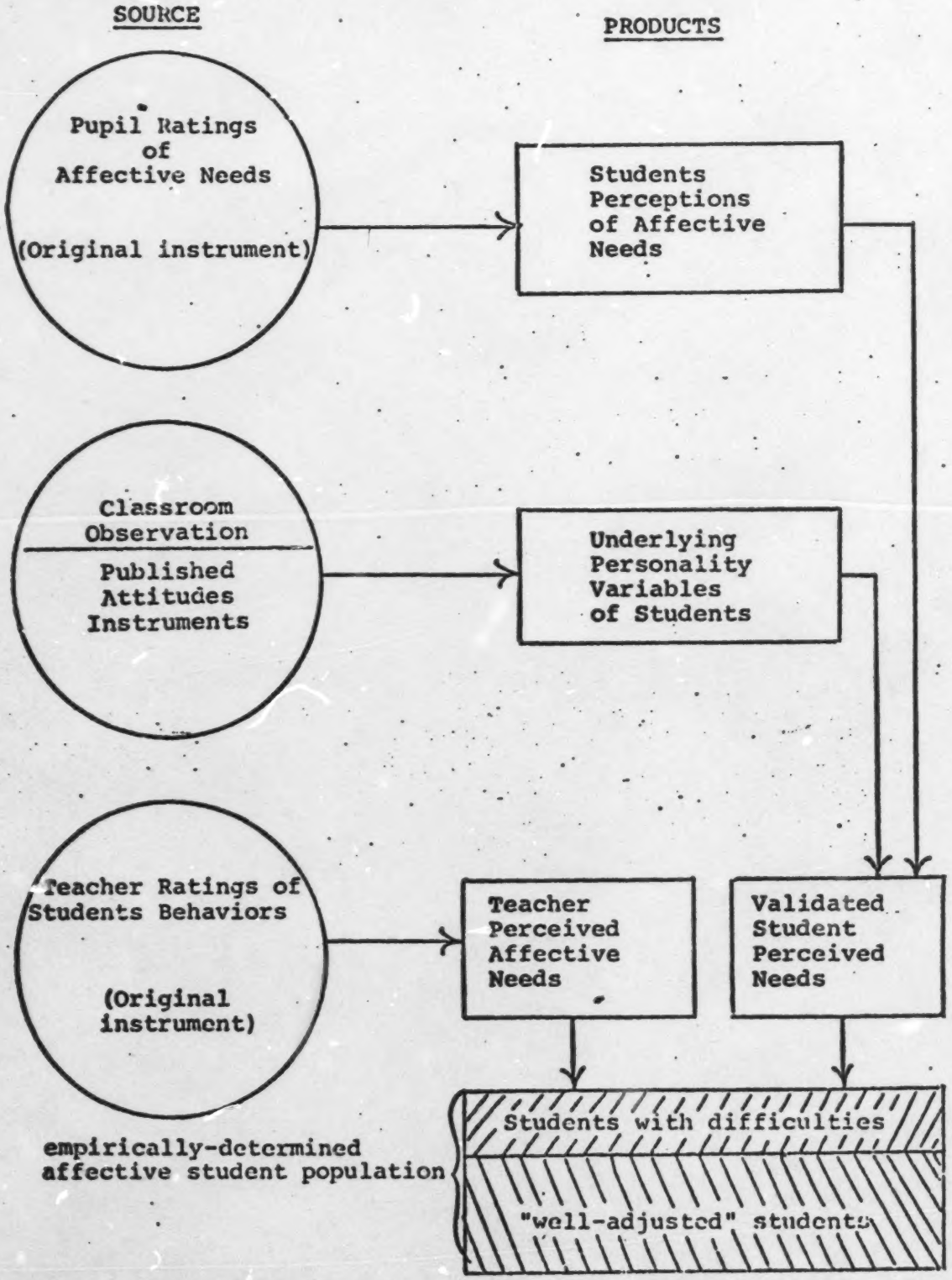
In Phase I of the assessment in the cognitive domain, comparisons of the six geographical regions were made on the basis of the statewide totals, which were compared with national norms. Regionally, mean levels of verbal I.Q. were highest in Region 2 and lowest in the Region 5 and Region 3 areas. Region 3 and Region 5 fell below statewide totals decisively in all the cognitive areas. The defined low abilities in the Region 3 and Region 5 areas have added significance in the context of low cognitive means in these two regions, as do the defined high abilities in Region 2 in the context of high cognitive means in this region.

Cognitive Achievement and Needs: Grade 4 - - The SRA Achievement Series, Blue Level was used to determine cognitive performance. Because this battery was administered in March 1970 (a time for which there are no set national norms), the staff adjusted the national norms to correspond to a grade equivalency of 4.7.

Rank order of regions determined by the number of cognitive clusters at or above the national means was as follows: Region 2,12; Region 4 and Region 6, 10; Region 1,7; Region 5,1; and Region 3,0.

FIGURE 1

MODEL FOR THE ASSESSMENT OF NEEDS IN THE AFFECTIVE DOMAIN*



*Identified needs to be analyzed by selected cognitive, perceptual, and learning-facilitative variables.

Cognitive Achievement and Needs: Grade 7 - - The grade 7 sample intelligence quotients were assessed by the California Short-Fort Test of Mental Maturity.

Regionally mean levels of language I.Q., non-language I.Q., and total I.Q. were highest in Region 2. Region 1 ranked lowest in non-language I.Q. and total I.Q., while Region 4 ranked lowest in language I.Q. The scores for the language and total I.Q.'s for Regions 1, 4 and 5 were seriously below the statewide mean. On the other hand, Region 2 and Region 6 had considerably higher scores than the statewide mean, which indicates an unbalanced situation with regard to measured I.Q.'s existent in Virginia.

Regionally 12 cognitive areas were assessed. Regions 2 and 6 showed no needs. (Excellence was achieved in all 12 cognitive clusters based on the statewide mean. However, in grade 7, no region had a mean at or above the national norm in social studies, references, and charts. This has been a significant indicator for Virginia educators.) Regions 1, 4 and 5 fall below the established norms in all 12 cluster areas.

Cognitive Achievement and Needs: Grade 11 - - The intelligence or aptitude of the grade 11 sample was assessed by the School and College Ability Test. Regionally, the mean level of the verbal score was highest in Region 2 and fell below the national mean by only one point in Regions 1 and 6. Quantitative and total score means in all regions were equal to or greater than the national norms, but were considerably higher in Region 2.

Region 1 was lower than the state averages in all three subtests, Region 6 lower in verbal and total scores, and Region 3 lower in verbal. Both Regions 2 and 5 were higher in all three subtests.

Rank orders of regions determined by the number of cognitive clusters at or above the national means was as follows: Region 2, 5; Region 6, Region 3 and 5, 4 each; and Regions 4 and 1, 3 each.

Reporting by cognitive cluster, all six regions had means at or above the national norm in social studies, reading, and writing; Region 6 alone fell below the national norm in listening; Region 2 alone ranked above the national mean in science; and all six regions fell below the national mean in mathematics.

In Phase II of the assessment of the cognitive domain, the emphasis of the study was redirected based on Phase I results. As the primary dificits had been observed in the reading area, this study concentrated on reading in the subject content area. As was seen in Table II, the McCall-Crabbs Reading in the Content Area was administered to grades 4, 6, 9 and 12. These tests were designed to measure reading achievement in the subject content areas of language arts, science, and social studies in all four grades, with the addition of math at the sixth grade levels. Mean percent correct response scores in each of these content areas are presented for the six regions and the state as a whole by grade level in Table III, while comparisons of mean scores can be made within a grade level, comparison of scores across grades should consider trends rather than actual scores since different test forms were administered.

These regional norms provide a benchmark indication of levels of performance

TABLE III

Virginia Educational Needs Assessment
Reading Comprehension Test Results
Fall, 1974

	Mean Percent Correct Responses						
	REGION 4	REGION 6	REGION 2	REGION 1	REGION 3	REGION 5	Total Virginia
Grade 4:							
Language Arts	64.77	68.70	70.32	65.39	63.93	65.36	66.07
Science	64.19	67.89	66.64	64.27	62.59	63.79	64.6[illegible]
Social Studies	56.60	59.90	61.68	55.88	54.23	56.67	57.06
Grade 6:							
Language Arts	56.25	59.04	59.06	54.91	54.16	53.17	55.84
Science	55.35	58.06	58.78	54.66	54.52	53.13	55.52
Social Studies	68.98	72.65	72.16	68.39	68.18	64.83	69.96
Math	57.87	59.76	59.18	56.56	54.88	55.08	57.02
Grade 9:							
Language Arts	74.39	72.75	76.06	70.38	67.70	69.43	71.64
Science	74.46	73.45	77.43	71.34	67.47	69.29	72.11
Social Studies	71.63	71.15	76.01	68.56	63.73	66.17	69.40
Grade 12:							
Language Arts	67.22	69.94	72.79	66.63	62.30	63.40	66.98
Science	80.36	80.81	84.06	80.77	76.63	79.34	80.32
Social Studies	79.99	79.99	85.31	78.14	73.21	75.63	78.56

across the state. It should be pointed out that the comparisons do not reflect differences in the quality of instruction; there may be differences in the levels of academic aptitude which school divisions in the various regions must work with.

Pupils in Regions 2 and 6 scored consistently above the state averages in every content area in the four grades tested. While average reading achievement scores in these two regions were very similar for grades 4 and 6, at the ninth and twelfth grade levels Region 2 pupils' average scores in all three content areas were considerably above those for all other pupils in Virginia. Average reading achievement scores for sample pupils in grades 4, 6, 9 and 12 in Regions 3 and 5 were below state averages in all subject content areas. Their scores were also below those of all other regions, with only one exception. At each grade level, reading achievement of pupils in Region 1 paralleled the averages for the statewide sample. This was also true of mean scores for Region 4 students, with the exception of the ninth grade pupils whose average scores were above state averages in language arts, science, and social studies.

Affective Domain

In the 1969-70 project, operationally-stated objectives were developed for these four areas based on a self-social system model. The model limited concern to those behaviors observable in the school and classroom setting.

Based on these objectives, questionnaires for elementary, intermediate and secondary grade levels were developed for use by classroom teachers. Items were formatted as statements, and students were given a five-point scale to indicate the degree to which each statement was true for them. Items were subjected to readability analysis and revision. After this, a pilot test was made on a diverse group of students, and item analysis and student comments were used to further revise the form.

After revision a second pilot test of a diverse group of students was conducted and revisions were made. These developmental efforts provided forms which were easy to administer with items which were not offensive to laymen. During statewide administration of the form, no complaints were received about the content of the items from parents or community members. To check validity, the scales were related to other independent measures of personality such as achievement, classroom observation, and the sub-scales of the High School Personality Questionnaire.

Large scale data-collection using the forms was conducted in 1970, enabling the study of relationships with other measures. Next, pilot projects based on experimental teaching and videotaped classroom interactions were developed which used these scales to measure student affect. Data from three years of experimentation in these projects were used to again modify the scales.

Through the 1974-75 testing, the questionnaire has been further validated by studying the scores in relation to student learning. The basis of this validation effort is that affective assessment for education should be conducted so that those attitudinal characteristics related to student learning are given attention. Strong correlations were found between the subscale scores and gains in student achievement.

The 1974-75 administration of the VAAQ in the Needs Assessment testing has provided data which establishes norms for the instrument across the state and for regions within the state. Local school divisions will be able to administer the VAAQ to determine system-wide, school, or classroom needs in the affective domain, and the instrument can be used as a flagging device to indicate a need for more comprehensive diagnosis in specific students. Since the VAAQ scoring system uses the association between the VAAQ scores and academic performance, the instrument can be used as an indicator of expected levels of student achievement associated with attitudinal factors. As an assessment device, the scores obtained on the VAAQ may help to identify affective deficiencies which may account for deficiencies or unsatisfactory progress in student achievement.

Profiles for the six geographical regions were constructed for the four parts scores and total score on the Virginia Affective Assessment Questionnaire. The resultant was similar to the profiles developed for the cognitive domain. A correlational analysis was then conducted for grades 6, 9 and 12. A summary of the results are included in Tables IV, V and VI.

As can be seen in Table IV, neither citizenship nor interpersonal relationships relate to the cognitive domain at grade 6. Yet self to school, education and learning and self-esteem are highly related along with the total VAAQ score. As can be seen on Table V, interpersonal relationships still do not relate to the cognitive domain at grade 9, but by grade 12 (Table VI) all four part scores and the total score are highly related to the cognitive domain.

Composition

In Phase I of the Needs Assessment, deficits in the writing area were not explored. However, Phase II undertook the investigation of writing variables and their correlates to the affective domain and the cognitive domain. Table VII reports descriptive statistics on selected composition variables for grade 12. The results are wholly consistant with those found in the reading portion of the study and the affective portion of the study. Total words written is generally higher for those regions with better cognitive ability and higher affective modal responses. The inverse is true for number of words mispelled and unique words mispelled. That is, those regions with better cognitive abilities and higher affective modal responses tend to spell fewer words incorrectly.

When the composition variables are partitioned into high, middle and low attitudes groups, it is evident that affect has a direct relationship to these variables. As seen in Table VIII, there are very few reversals of this trend when the regions are looked at individually. This is further substantiated by examining the correlational analysis between the composition variables and the VAAQ part scores seen in Table IX.

Summary

The follow-on data collected in the Phase II study has provided longitudinal data to supplement the data collected in Phase I. The addition of reading and writing exercises has filled gaps evident in the final analyses of Phase I. Finally, the Virginia Affective Assessment Questionnaire and the Virginia Psychomotor Screening Instrument have been fully standardized and

normed so that they can be made available to other educational agencies across the country.

Follow-on action is being concluded this spring at the University of Virginia to correlate data collected in all three (3) domains: cognitive, affective and psychomotor which was not dealt with in this paper. This is being done to determine the effect of a deficit in any one domain as an indicator of potential problem areas in the other domains. Early results indicate high correlation will be found. This final report will be available for distribution during the summer of 1976.

TABLE IV
GRADE 6

PEARSON CORRELATION COEFFICIENTS

	McCall-Crabbs		SRA	
	Fall	Spring	Reading	Mathematics
VAAQ Scores				
Citizenship	.0241 n=621 S=.275	-.0401 n=605 S=.163	-.0185 n=466 S=.345	.0280 n=468 S=.273
Self to School, Education and Learning	.4328 n=621 S=.001	.2975 n=605 S=.001	.4316 n=466 S=.001	.4052 n=468 S=.001
Interpersonal Relationships	.0740 n=621 S=.033	-.0088 n=605 S=.415	.1023 n=466 S=.014	.0811 n=468 S=.040
Self-Esteem	.3444 n=621 S=.001	.1980 n=605 S=.001	.3472 n=466 S=.001	.2600 n=468 S=.001
Total Score	.5281 n=621 S=.001	.3246 n=605 S=.001	.5309 n=466 S=.001	.4721 n=468 S=.001

TABLE V

GRADE 9

PEARSON CORRELATION COEFFICIENTS

	McCall-Crabbs		Step		Seat		
	Fall	Spring	Reading	Computation	Verbal	Quantitative	Total
VAAQ Scores							
Citizenship	.4200 n=690 S=.001	.3612 n=690 S=.001	.2795 n=556 S=.001	.2330 n=563 S=.001	.2901 n=566 S=.001	.2827 n=563 S=.001	.2941 n=564 S=.001
Self to School, Education and Learning	.4130 n=690 S=.001	.3659 n=690 S=.001	.2844 n=556 S=.001	.2795 n=563 S=.001	.2440 n=566 S=.001	.2686 n=563 S=.001	.2681 n=564 S=.001
Interpersonal Relationships	.0932 n=690 S=.007	.0175 n=690 S=.323	.0384 n=556 S=.183	.0557 n=563 S=.094	.0206 n=566 S=.312	.0288 n=563 S=.248	.0296 n=564 S=.242
Self-Esteem	.2014 n=690 S=.001	.1766 n=690 S=.001	.2186 n=556 S=.001	.1409 n=563 S=.001	.1889 n=566 S=.001	.1845 n=563 S=.001	.1965 n=564 S=.001
Total Score	.5894 n=690 S=.001	.4990 n=690 S=.001	.4309 n=556 S=.001	.3689 n=563 S=.001	.3994 n=566 S=.001	.4081 n=563 S=.001	.4197 n=564 S=.001

TABLE VI

GRADE 12

PEARSON CORRELATION COEFFICIENTS

	McCall-Crabbs		Stan	SCAT		
	Fall	Spring	Reading	Verbal	Quantitative	Total
VAAQ Scores						
Citizenship	.2955 n=634 S=.001	.1726 n=632 S=.001	.3053 n=538 S=.001	.2827 n=542 S=.001	.2684 n=543 S=.001	.2899 n=540 S=.001
Self to School, Education and Learning	.3075 n=634 S=.001	.1512 n=632 S=.001	.3027 n=538 S=.001	.2922 n=542 S=.001	.2580 n=543 S=.001	.2933 n=540 S=.001
Interpersonal Relationships	.2881 n=634 S=.001	.2037 n=632 S=.001	.3475 n=538 S=.001	.2322 n=542 S=.001	.2379 n=543 S=.001	.2520 n=540 S=.001
Self-Esteem	.2324 n=634 S=.001	.1848 n=632 S=.001	.2138 n=538 S=.001	.2062 n=542 S=.001	.1275 n=543 S=.001	.1734 n=540 S=.001
Total Score	.4958 n=634 S=.001	.3098 n=632 S=.001	.5211 n=538 S=.001	.4558 n=542 S=.001	.4043 n=543 S=.001	.4549 n=540 S=.001

17

TABLE VII

Composition Exercise

Grade 12 - Fall, 1974

Composition	REGIONAL MEANS						Total Virginia
	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	
Total Words Written	215.76	219.97	229.04	232.42	212.91	232.14	223.36
Percentage Unique Words Written	55.99	57.60	53.92	54.40	50.06	55.13	55.52
Average Number Words per sentence	16.49	16.40	15.81	16.55	16.42	16.46	16.37
Percentage Total Words Misspelled	1.77	2.01	2.09	2.29	1.91	1.76	1.95
Percentage Unique Words Misspelled	2.80	3.11	3.23	3.55	2.91	2.68	3.02
N	720	441	471	465	437	529	3063

TABLE VIII

Composition Exercise
Grade 12 - Fall, 1974

Means of Writing Variables by Attitude Group

	Attitude Group			
	High	Middle	Low	Total
Total words Written				
Region 1	228.08	210.84	210.26	215.76
Region 2	235.90	220.94	184.02	219.97
Region 3	234.48	238.10	218.45	229.04
Region 4	250.35	236.76	206.86	232.42
Region 5	215.06	219.65	204.56	212.91
Region 6	246.57	232.90	211.68	232.14
Total Virginia	235.80	225.63	208.21	223.36
Percentage Total Words Mispelled				
Region 1	1.56	1.74	1.98	1.77
Region 2	1.67	2.24	2.39	2.01
Region 3	1.83	1.97	2.35	2.09
Region 4	1.97	2.34	2.57	2.29
Region 5	1.79	1.79	2.12	1.91
Region 6	1.55	1.72	2.10	1.76
Total Virginia	1.70	1.95	2.22	1.95
Percentage Unique Words Mispelled				
Region 1	2.43	2.75	3.16	2.80
Region 2	2.68	3.38	3.62	3.11
Region 3	2.81	3.14	3.57	3.23
Region 4	2.98	3.58	4.11	3.55
Region 5	2.61	2.76	3.27	2.91
Region 6	2.31	2.55	3.33	2.68
Total Virginia	2.60	3.00	3.46	3.02

TABLE IX

Correlations of Writing Variables With Attitude

Grade 12 - Fall, 1974

Composition	Virginia Affective Assessment Questionnaire				
	Total	Citizenship	Attitudes Toward Learning	Interpersonal Relations	Self-Esteem
Total Words Written	.202**	.193**	.228**	.154**	.129**
Unique Words Written	.218**	.230**	.238**	.162**	.138**
Percentage Total Words Misspelled	-.092**	-.097**	-.095**	-.077**	-.058**
Percentage Unique Words Misspelled	-.076**	-.090**	-.076**	-.061*	-.043**
N	3070	3070	3070	3070	3070

*Denotes a correlation significant at the .01 level.

**Denotes a correlation significant at the .001 level.

Needs Assessment Testing Program — Appendix A

Spring, 1974	Reading tests, writing tests and VAAQ selected, modified and developed.
Summer, 1974	Follow-up pupils. 4000 9th and 4000 12th graders identified from 1969 Needs Assessment and all of their 1973 test data punched.
September 3, 1974	School divisions informed of program and asked to cooperate in locating schools and grades of follow-up pupils who had been identified by searching 1973 state test data.
October 25, 1974	Fall workshops announced to divisions.
November 6-7, 1974	Workshops conducted in six locations; fall testing materials distributed.
November 7-29, 1974	Administration of fall tests to Needs Assessment sample pupils.
November 29, 1974	Requested completion date for testing.
December 16, 1974	Cooperation of Prince William in giving fall tests assured as replacement for Fairfax in 4th and 6th grades.
December 1, 1974 to January 15, 1975	Completed tests returned to Department of Research Methodology by all divisions except Prince William which had a late start.
January 22, 1975	Testing packets mailed to principals of each Prince William school in which testing to be conducted.
February 15, 1975	Completed Prince William materials returned.
April 21, 1975	Spring workshops announced to division.
April 23, 1975	Completed analysis of fall reading comprehension tests mailed to divisions.
April 28-29, 1975	Workshops conducted in six locations; spring testing materials distributed.
April 29-May 1, 1975	Administration of spring tests to Needs Assessment sample pupils.
May 24, 1975	Letter sent to divisions thanking them for participating and giving a schedule for completing analysis of fall tests.
May 21, 1975	Requested completion date for spring testing.
May 21-June 10, 1975	Completed tests returned to Department of Research Methodology by all participating divisions.